

Lecture #14

Nicholas J. Gotelli

March 31, 2016

Analyzing Published Data

Classification of analyses

- predictor, response variables
- $y = f(x)$
- variables continuous, discrete

	Continuous Response Variable	Discrete Response Variable
Continuous Predictor Variable	Regression	Logistic Regression
Discrete Predictor Variable	Analysis of Variance (ANOVA)	Contingency Table Analysis

Get Data From Published Graphs/Tables

- sample size n (reflects money, time constraints)
- mean values for groups (reflects “effect size” of treatment difference)
- standard deviations within groups (reflects variability)
- distinction between standard deviation and standard error

Simulate new data sets

- start with normal
- later switch to gamma, negative binomial, beta, or other

Calculate test statistic

- usually p value

Explore

- effects of effect size, sample size, variance

Use replicate to test for power and Type I error